

# Worcester Economic Indicators

Second Quarter 2016

This report can be accessed online at:

<http://www1.assumption.edu/worcester-economic-indicators-project/>

## *Solid Growth in Second Quarter*

*Employment up in health services, construction sectors*

### Worcester Economic Index

The Worcester economy continued its steady, if unspectacular, growth as the Worcester Economic Index (WEI) posted a 2.9% increase in the second quarter of 2016. The WEI is estimated using employment and unemployment data for the greater Worcester economy released each month by the Bureau of Labor Statistics (BLS). Since March, all three data series used in the estimation of the WEI

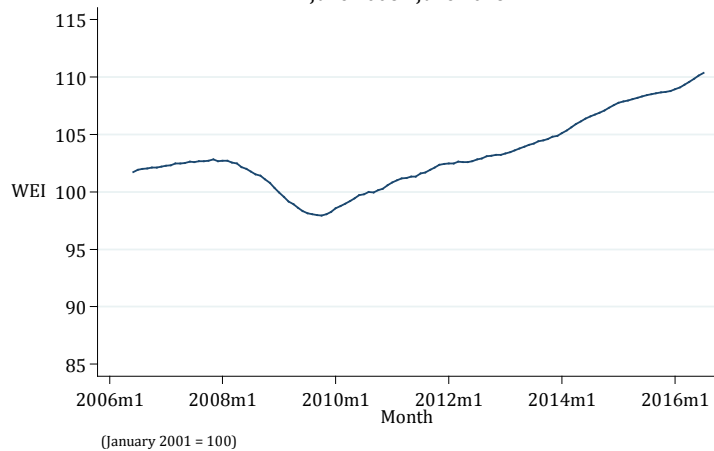
have moved in a positive manner. Both payroll employment and household employment have increased while the local unemployment rate has fallen. After adjusting for seasonal variation, payroll employment which is estimated by the BLS using a survey of employers, has risen by over 1400 employees since March. While household employment, derived from the BLS survey of households, has increased by about 800 workers. In addition, the unemployment rate (also derived from the survey of households) has fallen to a seasonally-adjusted rate of 4.5% in June, down from 4.8% in March.<sup>i</sup>

Figure 1 shows the Worcester Economic Index over the past 10 years. Following the recession of 2008-09 the WEI has shown a growing local economy in most months since that time. Table 1 shows the Worcester Economic Index over the past 13 months, its month-to-month change, and quarterly growth rate. As the table shows, following a relatively sluggish fourth quarter of 2015, the WEI has grown more quickly over the first two quarters of 2016. Since June 2015, the WEI has increased 1.7% with positive growth in all but one month.

See page 3 for a discussion of local employment trends in different industry sectors.

Figure 1: Worcester Economic Index

June 2006 - June 2016



## Worcester Economic Outlook

Looking forward, the Worcester Economic Index is expected to continue the steady pattern of growth experienced over the past year. Based on the recent performance of the WEI as well as four leading indicators of the national economy, the WEI is expected to grow by about 2% over the

remainder of 2016. As table 2 shows, the June six-month forecast is 2.0%, while the average of the April, May, and June forecasts is only slightly higher at 2.1%.

Table 2 also shows the growth forecasts broken down into its 6 components. The first component is the long-run trend growth of the WEI which is estimated to be about 1.3% on an annualized basis. The values shown for each of the other components listed in table 2 represent the amount that each component contributes to the WEI forecast being above or below trend. The component which makes the largest contribution to the above trend forecast is the WEI itself. Past values of the WEI are included in the forecast model because economies tend to exhibit momentum and therefore recent economic performance tends to be an indicator of future performance.

Focusing on the average forecast for quarter 2 we see that the four national leading indicators do not contribute substantially to the growth forecast. The consumer expectations indicator currently shows no impact on the WEI quarter 2 forecast. Over the past 12 months, this indicator which is based on the University of Michigan Survey of Consumer Sentiments has fluctuated between 77 and 85, with June posting an 82.4 value near the middle of this range.<sup>ii</sup>

Changes in the S&P 500 stock index are included in the forecast model as a measure of investor attitudes toward future business conditions. In spite of a rough January and February, the S&P is now up over 6% since the start of the year, enough to contribute a 0.1% bump to the WEI forecast.

**Table 1**  
Worcester Economic Index (WEI)  
June 2015 - June 2016

Month	Worcester Economic Index	Change from previous month	Quarterly Growth Rate, Annualized
June 2015	108.3	0.1	1.2%
July 2015	108.4	0.1	
August 2015	108.5	0.1	
September 2015	108.6	0.1	1.1%
October 2015	108.6	0.0	
November 2015	108.7	0.1	
December 2015	108.8	0.1	0.7%
January 2016	108.9	0.1	
February 2016	109.1	0.2	
March 2016	109.3	0.2	2.0%
April 2016	109.6	0.3	
May 2016	109.9	0.3	
June 2016	110.1	0.2	2.9%

**Table 2**  
Breakdown of Projected Growth of WEI<sup>iii</sup>  
6-month growth forecast, annualized basis

Component	June 2016	Quarter 2 Average
Trend	1.3%	1.3%
Consumer Expectations	-0.1%	0.0%
S&P 500	0.1%	0.1%
Interest Rate Spread	-0.1%	0.0%
Leading Credit Index™	0.1%	0.1%
WEI	0.7%	0.7%
Total	2.0%	2.1%

Components may not add to total due to rounding.

The interest rate spread, which is the difference between the yield on a 10-year Treasury  
(continued on page 4)

## A look at employment by sector.

Since June 2015, the greater Worcester area has added about 3,500 jobs according to the BLS Current Employment Statistics Survey. This 1.2% increase is down from the 3.6% gain during the prior year. Private sector job growth was somewhat better, growing at 1.7%. However, job gains have not been shared equally across employment sectors. As table 3 shows, the goods producing sector lead by an upswing in construction employment, grew at a faster rate than the service providing sector in both the greater Worcester area and in Massachusetts as a whole. And while manufacturing employment grew modestly in Worcester, bucking the long-run trend, the share of employment devoted to goods production is still just 13.8%. As for services, the two local sectors which saw the highest growth rates over the past year were transportation/utilities and health care which have also been the fastest growing sectors for the Worcester area since 2000.

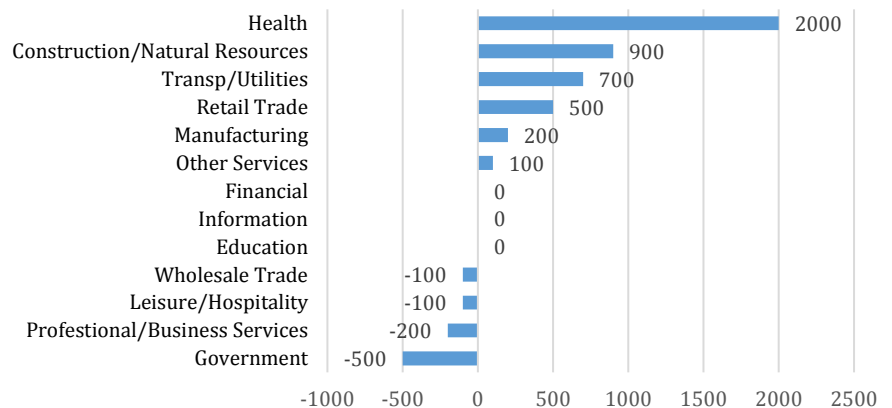
**Table 3**  
**Employment Breakdown by Industry**  
**Worcester and Massachusetts**

Employment Category	Worcester			Massachusetts		
	Percent change since June 2015	Avg. annual percent chg. since 2000	Share of total nonfarm employment	Percent change since June 2015	Avg. annual percent chg. since 2000	Share of total nonfarm employment
<b>Total Nonfarm</b>	1.2%	0.3%	100.0%	1.9%	0.4%	100.0%
Private Sector	1.7%	0.2%	85.0%	1.4%	0.4%	87.4%
<b>Goods Producing</b>	2.9%	-2.3%	13.8%	3.0%	-1.8%	11.4%
Construction/Nat. Res.	8.7%	0.0%	4.0%	7.3%	1.1%	4.4%
Manufacturing	0.7%	-2.8%	9.8%	-0.2%	-2.9%	7.0%
<b>Service Providing</b>	1.0%	0.8%	86.2%	1.7%	0.7%	88.6%
Wholesale trade	-1.0%	-0.6%	3.6%	-0.2%	-0.7%	3.4%
Retail trade	1.6%	-0.2%	10.9%	0.6%	-0.2%	9.9%
Transp./utilities	5.8%	2.3%	4.5%	1.0%	0.0%	2.6%
Information	0.0%	-0.3%	1.3%	1.1%	-1.0%	2.5%
Financial	0.0%	0.0%	5.4%	2.1%	-0.3%	6.2%
Prof. & bus. services	-0.7%	-1.1%	9.3%	2.8%	0.7%	15.4%
Education	0.0%	2.1%	3.9%	1.0%	0.7%	4.3%
Health	3.7%	2.9%	19.6%	3.5%	2.5%	17.1%
Leisure & hospitality	-0.4%	1.0%	8.9%	1.7%	1.6%	10.5%
Government	-1.2%	0.7%	15.0%	0.2%	0.2%	12.6%
Other services	0.9%	1.0%	3.9%	0.6%	1.3%	3.9%

Like Worcester, the Commonwealth of Massachusetts saw substantial growth in the health care sector. However, Massachusetts also experienced solid growth in the professional and business services, leisure and hospitality, and financial sectors, while Worcester saw declining or at best flat employment in those areas. For the state as a whole, only manufacturing, and wholesale trade were down over the past year and almost every sector outperformed its long-run average.

Figure 2 shows the net number of jobs added in each sector in the greater Worcester area over the past 12 months. Health care, the single largest sector in the Worcester area, added the most jobs since June 2015. Construction, which grew at the highest rate, 8.7%, but comprises only a 4% share of the local economy, added a smaller but not insignificant 900 jobs.

**Figure 2**  
**12 Month Employment Change by Sector**  
**Net New Jobs, Worcester NECTA since 6/2015**



bond and the federal funds rate, is included as a measure of monetary policy. The larger the spread the more growth-oriented the policy. While the Federal Reserve is maintaining a low federal funds rate target, recent declines in 10-year Treasury yields has brought the spread down to where it is only neutral with respect to the growth forecast. Low Treasury rates are due in part to weak economic performance abroad, as investors choose to buy U.S. Treasuries which are still providing higher yields than the bonds of some other nations.

Conditions in the credit markets, as measured by the Leading Credit Index™, is currently providing a small positive impact to the WEI forecast. The Leading Credit Index™ is compiled by The Conference Board each month and is a composite of several financial sector variables that aims to capture credit market conditions in the US.

### Local Leading Indicators

The above forecast of the Worcester Economic Index is based on four national leading indicators, recent WEI values, as well as its long-run trend. To supplement this forecast each quarterly *Worcester Economic Indicators* report includes a discussion of three local leading indicators: online help-wanted advertisements, new business incorporations, and state-wide initial unemployment claims. Table 4 shows how these three leading indicators have performed over the past year. Currently, two of the three indicators are providing negative signals on the direction of the economy.

Online help-wanted advertisements have fallen substantially over the past year and therefore is offering a negative signal at this time. The number of help-wanted advertisements is a measure of the demand for labor by employers. It is considered a leading indicator of employment because advertisements usually precede hiring so an increase in help-wanted ads may signal additional employment down the road. On a seasonally-adjusted basis the number of online job openings is down over 25% since the second quarter of 2015.<sup>iv</sup> Online help-wanted advertisements have also fallen at the national level, down about 11% since June 2015.<sup>v</sup> Fewer job openings is a sign that firms are reluctant to hire and therefore is a pessimistic signal for the economy.

As in the first quarter, new business incorporations are providing a positive signal at this time. Compared to a year ago the number of incorporations is up about 15%.<sup>vi</sup> An increase in incorporations is considered a positive signal because new businesses may look to hire workers in the near future.

**Table 4**  
**Local Leading Indicators**  
**Percentage Change**  
**Quarter 2 2015 to Quarter 2 2016**

Indicator	Percent Change	Signal
Online Help Wanted Ads <sup>v</sup>	-25.8%	Negative
New Business Incorporations <sup>vi</sup>	15.1%	Positive
Massachusetts Initial Claims <sup>vii</sup>	7.2%	Negative

The final indicator is the number of initial unemployment claims in the Commonwealth of Massachusetts. Since the first quarter of 2015 initial claims have increased over 7% statewide. While this is sending a negative signal, it should be noted that initial claims for Massachusetts are still near 25-year lows. So while initial claims are currently showing an uptick, it is not surprising since it is unlikely that the economy could sustain record lows

indefinitely. If claims continue to rise over the remainder of the year that would be a stronger signal of a weakening economy.<sup>vii</sup>

To sum up, the Worcester Economic Index (WEI) increased 2.9% in the second quarter of 2016. The WEI is expected to grow at roughly 2% over the coming six months. Both national and local leading indicators are providing mostly neutral signals at this time.

The next Worcester Economic Indicators report will be issued in early November 2016. Additional information about this project is available at:  
<http://www1.assumption.edu/worcester-economic-indicators-project/>.

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<sup>i</sup> Author's calculations based on data from the Bureau of Labor Statistics. Payroll employment is obtained from the State and Area Employment Database (SAE) of the BLS. Household employment and the unemployment rate is obtained from the Local Area Unemployment Database (LAU) of the BLS. All employment data is for the Worcester NECTA which consists of the city of Worcester as well as 48 surrounding towns located in south central Massachusetts and northeastern Connecticut. The seasonally-unadjusted BLS data is adjusted for seasonal variation by the author using the X-12 ARIMA program developed by the U.S. Census Bureau.

<sup>ii</sup> University of Michigan, Survey of Consumers, <http://www.sca.isr.umich.edu/>

<sup>iii</sup> The leading indicators used to forecast the WEI are:

Consumer expectations: From the University of Michigan Survey of Consumer Sentiments.

S&P 500: Monthly closing value of the index.

Leading Credit Index™: The Conference Board's index of credit market conditions.

Interest rate spread: The yield on a 10-year Treasury bond less the federal funds rate.

The above leading indicators are obtained from The Conference Board's Business Cycles Indicators database.

<sup>iv</sup> The Conference Board Help Wanted Online® (HWOL).

<sup>v</sup> The Conference Board Help Wanted Online® (HWOL).

<sup>vi</sup> Secretary of the Commonwealth of Massachusetts

<sup>vii</sup> Massachusetts Department of Employment and Training. Initial claims for the Worcester area were originally part of the index, but that data has not been available since June 2013. Since it is desirable to utilize information that is as local as possible, if initial claims for Worcester becomes available in the future the index will be revised to include that data.